

Welcome to CADD Services



The CADD News would like to welcome our newest em-

ployee Dean Noland to the CADD Services Unit. Dean was promoted to Technology Support Specialist within the Information Technology / CADD Services section. Dean came from the Roadway Design - CADD Support section and has over 18 years with NCDOT.

Dean graduated from UNC at Charlotte in 1992 with a degree in Civil Engineering Technology. After a brief stint working for a Residential Structural Engineer, he started his career with NCDOT in 1994 working with the Photogrammetry Unit. In 2001 he had an opportunity to take a position in the Roadway Design Unit which he worked for over 11 years. The last four of those years were spent in the Roadway Design - CADD Support section. During this time he gained valuable CADD related experience by providing daily technical support along with developing training and documentation for the engineering software used within the Roadway Design Unit.



this issue

Newest Employee **P.1**

New CADD Images **P.2**

CADD Training Class **P.3**

Matching attributes **P.4**

Reference Files **P.6**

Last Word **P.8**

New Year—Welcome to 2013

As I put this edition of the CADD News together I'm wondering just what 2013 will bring.

A few predictions for the new year.

1. NCDOT's upper management will have a few new faces come January 5th. While I'm sure who the new Governor will be, as for a new Secretary of Transportation we will have to wait and see (Update Tony Tata was named Sec.of Trans. On 01.03.13).
2. The department will be asked to continue to do more with less. CADD Services remains committed to providing excellent service to assist our design and engineering staffs in this regard.
3. Computers and software will continue to change and "improve". 2013 will be the year that the NCDOT completely tran-

sitions from Windows XP to Windows 7. Not to mention we will begin to see tablet computers on construction projects and possibly an expansion of wireless networks.

4. CADD-wise 3D modeling will continue to gain traction both in design and construction. With contractors moving more to automated machine control for construction and grading the creation, understanding and use of 3D models will become more important than ever.

So there you have a few "safe" predictions. Since no one that I know can predict the future with any certainty I'm sure we will have a few surprises along the way — Happy New Year

Western Division Training is back (sort of)

While IT West has not gotten a new training facility to replace the previous one in Hickory CADD Services (along with PC Training) are again offering training classes for Divisions 9-14. Classes are currently being held at the ROW training room in Winston Salem and in the Temporary Training room in Asheville at the Division 13 Headquarters building. I would like to thank both the ROW Unit and Division 13 for allowing us to use these training rooms. For more information on CADD Training Classes contact Rande Robinson at 828.466.5526 or David Dietrich at 919.386.9116 for PC training or PC software support issues.

MicroStation You Tube videos

Freeware video demo **View Rotation** - <http://bit.ly/aS0CCw>

Freeware video demo **View Model** - <http://bit.ly/a2L56L>

Freeware video demo **View Levels** - <http://bit.ly/cXtHOM>

Trouble remembering where the upf is located?

You can open the MicroStation menu item Workspace -> About Workspace. In the middle of the dialog it will show the path to the file (hover over it to see the full path).

CADD IMAGES AND SUPPORTED MACHINES

Client Build released the 12Q4 images for all NCDOT computers in December. Images are available for the CADD machines listed below. The 12Q4 images are 64 bit with the Windows 7 operating system and Microstation V8i-SS2. AutoTurn 8.1 replaces 8.0. Some Trimble products are also upgraded.

| <u>Desktops</u> | <u>Laptops</u> | |
|-----------------|-----------------|----------------------|
| Lenovo b97 | Dell e5400 | HP 6560b HP 6440b |
| HP xw4600 | Lenovo r400 b41 | Lenovo r400 WZL |
| HP 6005 Pro MT | Lenovo L412 | HP 6460b |

The above machines are the only CADD machines currently supported by CADD Services. Note the absence of the Dell op755, which is currently being taken out of service and replaced with HP 6005 Pro MTs. If you are still using an op755, you should ask your support person where your Pro MT is.

The next machine forecast to fall off the support list is the Dell e5400 laptop. If you are using this machine, request a replacement.

Technical Services is supposed to be upgrading all DOT machines to Windows 7. If you are still running XP, ask your support person to upgrade your machine with the new 12Q4 CADD image

Bentley View



Need to view or print a quick copy of a MicroStation file but you don't have MicroStation on your PC. Then Just login to Citrix at:

<https://gateway.dot.state.nc.us/Citrix/XenApp/auth/login.aspx>

and select Bentley View icon. If you need help on how to get started using Bentley View.

Then check out the *Using Bentley View under Citrix* video on the CADD Support

IntraNet site at:

<https://inside.ncdot.gov/Business/technology/Pages/Tech-CADD-Trn-Videos.aspx>





How to get CADD Training

With each new version of software comes the never ending activity of learning how the program's great new features work and which old ones don't .

If you need training for a new employee or feel you need a refresher course in any of our CADD products, all you need to do is go to the CADD Support section of the NCDOT Intranet Portal at:

<https://inside.ncdot.gov/Business/technology/Pages/Tech-CADDServices.aspx>

Then select Training from the Document Library CADD Menu. From the Training page download and fill out the CADD request Training form and mail the form to:

Steve Brown
Engineering Application Services



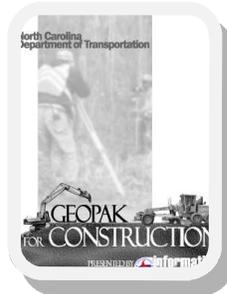
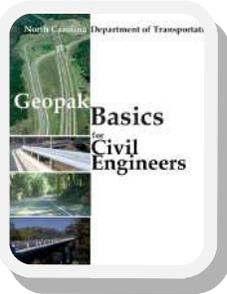
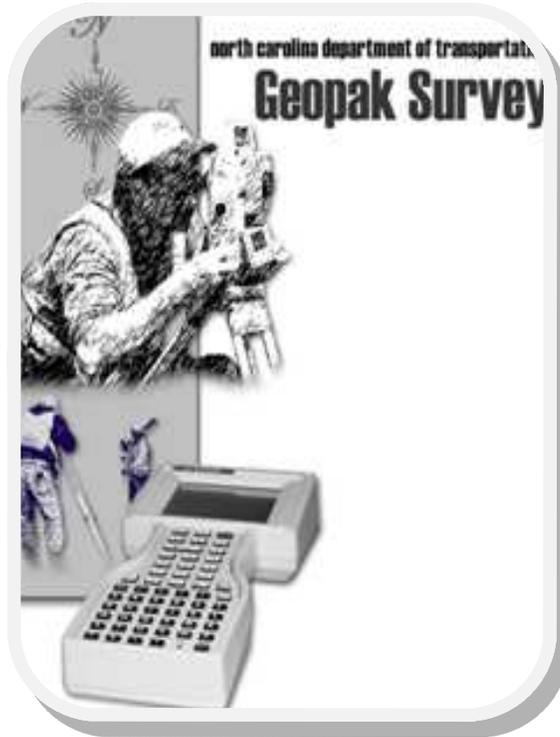
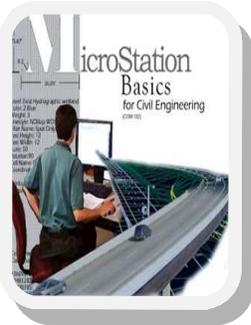
1597 Mail Service Center
Raleigh, NC 27699-1597

CADD Services will get you into the next available class provided there is no waiting list.

Remember that it is not necessary to continue to fill out requests if a request is on record. If in doubt email Steve at sbrown@ncdot.gov

Also, when making a request, **check off all the classes that you wish to take.** (i.e. It's not necessary to complete MicroStation before you can request GEOPAK). Once we receive and enter a request our database keeps up with them.

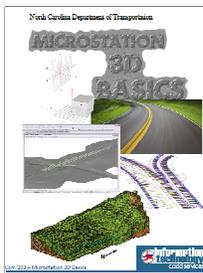
CADD Training Courses for NCDOT Employees



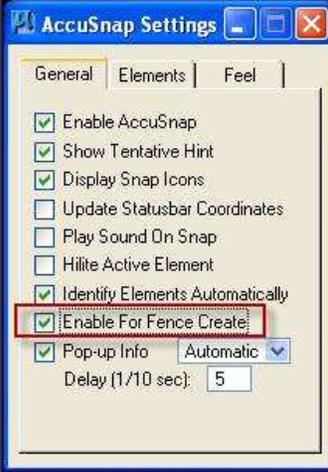
This two day entry level training class is designed for the surveyor who will utilize GEOPAK to download raw field data into roadway design projects. Provides training on the downloading, editing, processing, and mapping of raw field survey data and uploading once finished to help in the stakeout of highway projects.

Topics

1. Data collector transfer
2. Review and edit OBS data, survey setup
3. Processing data and reviewing reports
4. Mapping data
5. Chain and point editing
6. Survey data and DTM's
7. Survey DTM tools



Enable AccuSnap for Fence Create.



AccuDraw & AccuSnap

When using AccuSnap in conjunction with AccuDraw, one can use the following AccuDraw shortcut keys:

F—A 3D key that aligns/orients the AccuDraw compass with the front view of the design cube regardless of your views rotation.

S—A 3D key that aligns the AccuDraw compass with the right side view of the design cube regardless of your views rotation.

T—A 3D key that aligns the AccuDraw compass with the Top view of the design cube regardless of your views rotation.

AccuDraw also lets you change the snap mode for the *next snap* the following keys.

I—to use the Intersect Snap

N—changes to the Nearest Snap

C—Center Snap

MicroStation Tips—ALT+Data to match Attributes

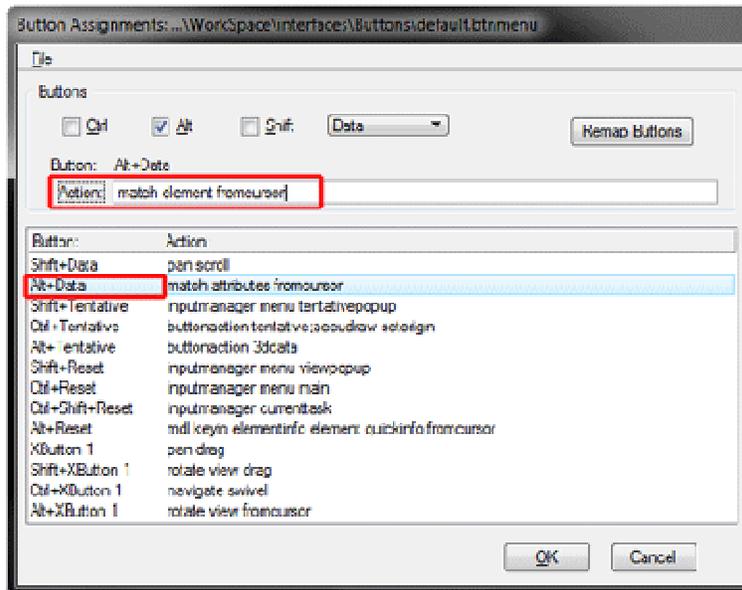
Alt+Data, to match the symbology from an element as you work, you will also be aware that it doesn't match other properties. It won't set Text Style from an element, or Hatching parameters. However, there is a way to get this button to "SmartMatch".

Go to Workspace > Button Assignments...

Highlight the line for Alt+Data.

In the Action field, change the command to:

```
match element fromcursor
```



Click OK.

Now, whenever you hold down the Alt key and click on an element, all settings will be matched, including text and dimension attributes, hatching and pattern parameters, cell names and active scale (but not active angle, weirdly enough). Don't forget you can also do this while in the middle of another command.
(From www.eatyourcad.com)

MicroStation Tips—Another Key in to try

What do you think the following MicroStation Key-in does?

```
$ %explorer /e,/select,$(_DGNFILE)
```

It opens a Windows Explorer to the same folder that your active design is in. Eliminating the need to navigate to it. Give it a try and see for your self. If you find it useful then assign it to a function key as described in the article above.



Optimizing Reference Files

Edited from a web posting by Nigel Davies

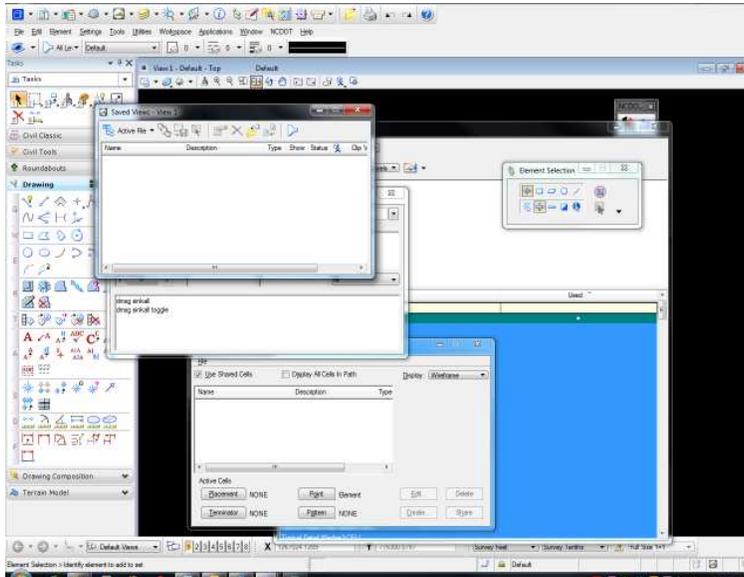
There are a number of best practices you can use to help speed up your use of references. While we can't promise to resolve all your issues, working to the principles below can improve your efficiency and reduce the time managing references.

There is no "ideal balance" for the number of levels used compared to the number of references. If you use more levels, files become large and unwieldy; split elements out into more references and, although files are smaller, information can be harder to find and the number of references that need attaching increases.

- **Live Nesting**—Avoid Live Nesting / Attachments when working with large numbers of references. Nested referencing slows the attachment of references down as, fairly obviously, there are more files to load. In our tests, Live Nested referencing increased file opening times by an average of 22%.
- **Detach references**—Only attach the files you need. Don't leave references attached with display off. If you don't need them detach them (and then compress the file).
 - Even with "Cache When Display Off" unticked detaching one reference makes a file 11% faster to open than turning the display off.
 - Opening a file with half of the files detached is 22% faster than trying to open it with the files attached and display off.
- **Compress your files regularly**—The smaller the file, the quicker it is to load. Duh!
- **Folders**—The number of folders makes no significant difference to the speed of working with references. You may notice a slight increase with more folders, but this is more than likely due to the way the references are attached:
- **Full path vs Relative vs Configuration Variables vs MS_RFDIR** Attaching references using Full Path or by Config Vars is the most efficient method.
- **Dialogue boxes** -The more dialogue and tool boxes you have open, the more memory MicroStation requires. This can slow your working down surprisingly quickly. Just having Reference Manager open increases file opening times by 17%.
- To **maximize the efficiency of MicroStation, close all unneeded tools and dialogue boxes.** Use Tasks and Pop-up tool boxes when ever you can (this ensures tools are "demand loaded" and do not eat up resources unnecessarily).
- **Merging** If you need to merge (flatten/bind) references, Merging into Master is quicker than Save As with References set to Merge/Merge to Cell. Make a duplicate of the master file first! (continued on Page 7)

Minimize All Dialogs—ALMOST

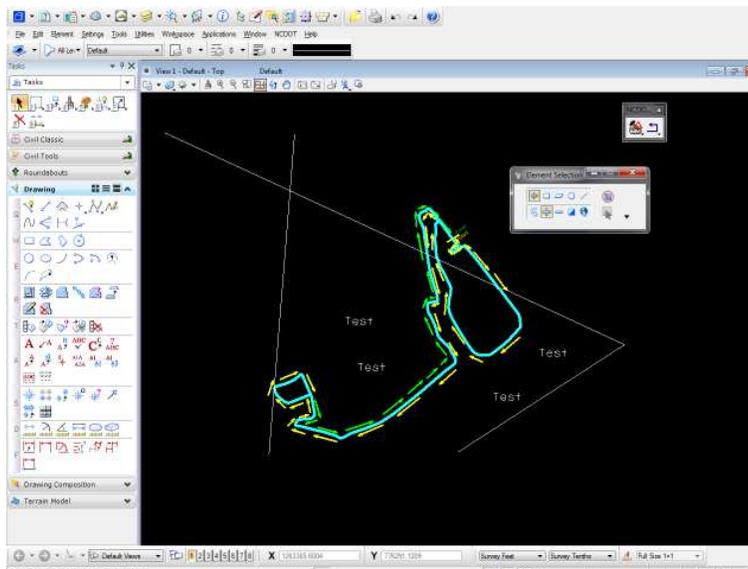
Ever have a screen full of dialog boxes and wished you could get rid of them all at once?



If so try using the following Key-in to get them to sink down. Better yet assign the command to function key and you won't even have to type it.

DMSG SINKALL TOGGLE

Which will result in a screen that looks like this.

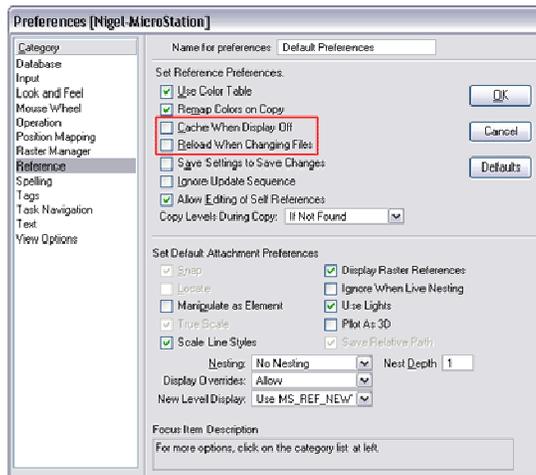


Guess what happens if you if you hit the function key again?



(from Page 5)

- **Preferences** To maximize the speed of loading references, make sure the following preferences are set:

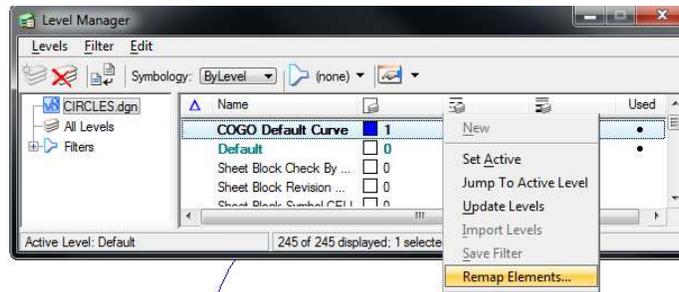
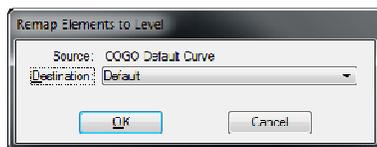


- “Cache When Display Off” = OFF
- Any references that are not displayed are not loaded into the memory on your local PC. This speeds up the opening time of files, but will result in a small delay when you turn the display of a reference back on (as it has to load into memory).
- “Reload When Changing Files” = OFF
- When on, this forces all references to reload into memory when changing files. Turning this off keeps all references stored in the local memory when closing one file and opening another. In our tests, turning this off gave a 21% increase in file opening time.

Remember, these recommendations are only guidance and need to be implemented alongside your procedures and working methods. Thinking about the way you use references is the most important thing to consider. The solutions for you depend on the size and type of your project, the amount of information, repetition, how many people will be working on the project, how your teams are set up and how you will exchange data with others.

Remap Elements—Levels

Ever place something (or a bunch of somethings) on the wrong level and need to move it to another one? There is a command that can be accessed by Right-click menu in Level Manager.



While it is true that NCDOT doesn't generally use Level Manager (we recommend Level Display) if you need it you need it. Simply highlight the level you wish to remap right click, select remap and fill in the dialog box. Just remember that it moves every thing on the level to the new one.



Last Word



Map Reading 101—This is a map of what?

This Map shows a very interesting historical fact. Can you tell what it is? If so send your best guess to rjrobinson@ncdot.gov

